Use of Computerised Clinical Database for Support of a Home Dialysis Programme

Kelvin L. Lynn, F.R.A.C.P. , Adrian L. Buttimore, Judith A. Inkster.
Christchurch Hospital, Christchurch, New Zealand

The Department of Nephrology at Christchurch Hospital provides a general nephrology and renal replacement service for a population of approximately 500,000 people in an urban and rural setting. Patients are trained for home-based hemodialysis (HD) or continuous ambulatory peritoneal dialysis (CAPD). A cadaveric and living donor kidney transplant programme is provided. The Department of Nephrology is staffed by 2.5 FTE nephrologists (one responsible for dialysis services), 1 manager (of dialysis services), 3 residents, 4 nurses, 5 clinical technicians, 2 secretaries, and a systems manager. There are currently 48 HD and 32 CAPD patients under care at home. The costs of treatment are HD $US12,660 and CAPD $US21,934 per patient per year (only drugs excluded).

The Department uses a multi-user clinical database called PROTON on a Novell Network platform. This user friendly, fast and flexible software has been configured to suit our clinical needs in the dialysis unit. Clinical data is entered at the time of patient contact by doctors and nurses. Database functions are enhanced by the inquiry module called QUARK. We are aided further by an automatic lablink which updates our database with the majority of biochemical and hematological test results. Selective validation of certain variables ensures on-going database integrity.

In the provision of dialysis services the computer system is used to record details of hospital dialyses, resource utilisation, generate patient reports, activity reports, and monitor patient safety.

The QUARK inquiry module allows us to produce and evaluate clinical audits, individual patient reports, disease registry reports, departmental statistics, financial reports and interrogate the database for research and teaching purposes. The information obtained can be presented in text, numeric or graphic form in any layout required. Extensive graphic facilities enable us to display long-term trends and assist in early detection of adverse changes. This type of 'decision support' assists greatly in patient management and reduces the need for routine outpatient clinic visits.

PROTON is complemented by our use of other software packages. They include spreadsheet, statistical, word processing and bibliography software. Modems provide access to other multidisciplinary scientific databases.

In addition to support of our clinical activities, the database produces information for administration and financial planning thus contributing to departmental efficiency. Use of the database has enabled us to maintain competitive costs for dialysis treatment.

0195-4210/95/$5.00